

Serial No.: 10/008,451
Examiner: Linh V. Nguyen

Amendment to the Claims

1 – 34. (Cancelled) Please cancel claims 1 through 34.

35. (New) A circuit for amplifying a signal, comprising:

a power amplifier having an input signal path and an output signal path; and
a predistortion linearizer circuit that comprises:

a circuit for generating a distorted signal;

a coupling circuit, coupled to the circuit for generating a distorted signal, wherein the coupling circuit is capable of introducing a relatively small amount of power from the input signal into the circuit and further capable of reflecting the distorted signal generated by the circuit back onto the input signal path without being physically coupled to the input signal path, and wherein the coupling circuit includes a microstrip having a predefined shape and located a predetermined distance from the signal path leading into the power amplifier such that the relatively small amount of power from the input signal is related to the predefined shape of the microstrip and the predetermined distance from the signal path.

36. (New) The circuit of claim 35 wherein the circuit for generating a distorted signal comprises:

a diode with an input for receiving the relatively small amount of power from the coupling circuit; and

a direct current adjustment circuit, coupled to the diode, capable of adjusting an amount of direct current inputted into the diode.

37. (New) The circuit of Claim 36, wherein said diode is a Schottky diode.

38. (New) The circuit of Claim 37, wherein the predefined shape of the microstrip, the predetermined distance from the signal path of the microstrip and said direct current adjustment circuit are manually adjusted to optimize a shape of the distorted signal.

Serial No.: 10/008,451
Examiner: Linh V. Nguyen

39. (New) A predistortion linearizer for use with a nonlinear device, said predistortion linearizer comprising:

a coupling circuit capable of receiving a relatively small amount of power from an input signal on a signal path that is connected to the nonlinear device and for reflecting a distorted signal back onto the input signal path, wherein said coupling circuit is located a distance from the signal path and not physically coupled with the signal path;

a diode coupled to said coupling circuit, capable of receiving the relatively small amount of power from the coupling circuit and generating the distorted signal in response to the relatively small amount of power;

a direct current adjustment circuit, coupled to said diode, capable of adjusting the amount of direct current inputted into said diode; and

wherein the distorted signal generated by the diode is adjusted to compensate for nonlinear spurs in an output of the nonlinear device by modifying the distance of the coupling circuit from the signal path.

40. (New) The predistortion linearizer of claim 39, wherein the distorted signal is adjusted to compensate for nonlinear spurs in an output of the nonlinear device by adjusting the distance of the coupling circuit from the signal path and adjusting the amount of direct current inputted into said diode.

41. (New) The predistortion linearizer of claim 40, wherein the coupling circuit is a microstrip.

42. (New) The predistortion linearizer of claim 41 wherein the distorted signal is adjusted to compensate for nonlinear spurs in an output of the nonlinear device by adjusting the distance of the coupling circuit from the signal path, adjusting the amount of direct current inputted into said diode and adjusting a shape of the microstrip.

43. (New) The predistortion linearizer of claim 39, wherein the type of diode used depends on the frequency of the input signal.

Serial No.: 10/008,451
Examiner: Linh V. Nguyen

44. (New) The predistortion linearizer of claim 39, wherein said diode does not affect the signal path or the operation of the nonlinear device.

45. (New) The predistortion linearizer of claim 39, wherein said nonlinear device and said diode are incorporated within a transmitter operating at or above 2 GHz.

46. (New) A method for linearizing a nonlinear device, said method comprising the steps of:

receiving, at the nonlinear device, an input signal on a signal path;

generating a distorted signal which is reflected onto the signal path by a coupling circuit and inputted into the nonlinear device, wherein the coupling circuit is not physically connected to the signal path;

outputting, from the nonlinear device, a compensated signal, wherein the distorted signal compensates for at least some of the nonlinear spurs introduced to the input signal by the nonlinear device; and

wherein the distorted signal may be adjusted to better compensate for at least some of the nonlinear spurs by adjusting a coupling factor between the coupling circuit and the signal path.

47. (New) The method of claim 46 for linearizing a nonlinear device, wherein adjusting a coupling factor between the coupling circuit and the signal path comprises adjusting a distance d between the coupling circuit and the signal path.

48. (New) The method of claim 47 for linearizing a nonlinear device, wherein adjusting a coupling factor between the coupling circuit and the signal path comprises adjusting a distance d between the coupling circuit and the signal path and a shape of the coupling circuit.